LISTING OF CLAIMS

1 (previously presented): A liquid injector for injecting a contrast medium into a subject whose fluoroscopic image is to be captured by an imaging diagnostic apparatus, comprising:

a liquid injection mechanism for injecting said contrast medium into said subject;

pattern storing means for registering data of a variable pattern in which an injection rate of the contrast medium for keeping an image contrast of the fluoroscopic image within a predetermined range varies with time, said pattern storing means storing registered data in which the variable pattern is comprised of a linear decrease of the injection rate of the contrast medium from the start of injection to a set point of time, and from said point of time a constant or a linear increase of the injection rate of the contrast medium within a predetermined injection time; and

rate controlling means for varying an operating speed of said liquid injection mechanism according to a modified variable pattern, said modified variable pattern obtained by vertically moving said variable pattern depending on a total amount of the contrast medium to be injected into the subject, with said predetermined injection time unchanged.

2 (original): A liquid injector according to claim 1, wherein said pattern storing means comprises means for registering the data of the variable pattern in order to maintain a state in which the image contrast of the fluoroscopic image that is produced by said contrast medium approximates an optimum level.

3 - 4 (canceled)

5 (previously presented): A liquid injector according to claim 1, further comprising:

coefficient storing means for registering data of predetermined coefficients assigned to respective regions to be imaged of the subject;

data entering means for accepting entered data of a region to be imaged of the subject;

coefficient reading means for reading the data of one of the coefficients from said coefficient storing means depending on the region to be imaged of the subject whose data has been entered by said data entering means; and

total calculating means for calculating said total amount of the contrast medium to be injected into the subject based on the coefficient whose data has been read by said coefficient reading means.

6 (previously presented): A liquid injector according to claim 1, wherein said contrast medium is available in a plurality of types having different concentrations of an effective component contained therein, further comprising:

concentration storing means for registering data of the different concentrations in the types of said contrast medium;

data entering means for accepting entered data of a type of the contrast medium;

concentration reading means for reading data of the concentration from said concentration storing means depending on the type of the contrast medium whose data has been entered by said data entering means; and

total calculating means for calculating said total amount of the contrast medium to be injected into the subject based on said concentration whose data has been read by said concentration reading means.

7 (previously presented): A liquid injector according to claim 1, wherein said contrast medium is available in a plurality of types having different concentrations of an effective component contained therein, further comprising:

concentration storing means for registering data of the different concentrations in the types of said contrast medium;

coefficient storing means for registering data of predetermined coefficients assigned to respective regions to be imaged of the subject;

data entering means for accepting entered data of a body weight of the subject, a region to be imaged of the subject, and one of the types of the contrast medium;

concentration reading means for reading data of the concentration from said concentration storing means depending on the type of the contrast medium whose data has been entered by said data entering means;

coefficient reading means for reading the data of one of the coefficients from said coefficient storing means depending on the region to be imaged of the subject whose data has been entered by said data entering means; and

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total calculating means for calculating said total amount of the contrast medium to be injected into the subject based on said body weight obtained by said data entering means, said concentration obtained by said concentration reading means, and said coefficient obtained by said coefficient reading means.

8 (previously presented): A method of injecting a contrast medium into a subject with a liquid injector comprising:

(i) registering data of a variable pattern in which an injection rate of the contrast medium for keeping an image contrast of the fluoroscopic image within a predetermined range varies with time, the variable pattern being comprised of a linear decrease of the injection rate of the contrast medium from the start of injection to a set point of time, and from said point of time a constant or a linear increase of the injection rate of the contrast medium within a predetermined injection time;

(ii) modifying the variable pattern by vertically moving said variable pattern depending on a total amount of the contrast medium to be injected into the subject with said predetermined injection time unchanged; and

(iii) injecting the contrast medium into the subject at an injection rate according to said modified variable pattern by varying an operating speed of a liquid injection mechanism with time.

9 - 10 (canceled):

11 (previously presented): A computer unit for controlling operation of a liquid injection mechanism of a liquid injector for injecting a contrast medium into a subject whose fluoroscopic image is to be captured by an imaging diagnostic apparatus, comprising:

pattern storing means for registering data of a variable pattern in which an injection rate of the contrast medium varies with time, said pattern storing means storing registered data in which the variable pattern is comprised of a linear decrease of the injection rate of the contrast medium from the start of injection to a set point of time, and from said point of time a constant or a linear increase of the injection rate of the contrast medium within a predetermined injection time; and

rate controlling means for varying an operating speed of said liquid injection mechanism according to a modified variable pattern, said modified variable pattern

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obtained by vertically moving said variable pattern depending on a total amount of the contrast medium to be injected into the subject with said predetermined injection time unchanged.

12 - 16 (canceled)

17 (previously presented): A computer readable medium having a program stored thereon for executing a computer to perform a method according to claim 8.

18 (previously presented): A liquid injector according to claim 1, further comprising:

data entering means for accepting entered data of a body weight of the subject; and

total calculating means for calculating said total amount of the contrast medium to be injected into the subject based on said body weight whose data has been entered by said data entering means.

19 (previously presented): A method according to claim 8, further comprising:

registering data of the different concentrations in the types of said contrast medium;

registering data of predetermined coefficients assigned to respective regions to be imaged of the subject;

accepting entered data of a body weight of the subject, a region to be imaged of the subject, and one of the types of the contrast medium;

reading data of the concentration depending on the type of the contrast medium whose data has been entered;

reading the data of one of the coefficients depending on the region to be imaged of the subject whose data has been entered; and

calculating said total amount of the contrast medium to be injected into the subject based on said body weight, said concentration, and said coefficient,

20 (previously presented): A computer unit according to claim 11, wherein said contrast medium is available in a plurality of types having different concentrations of an effective component contained therein, further comprising:

concentration storing means for registering data of the different concentrations in the types of said contrast medium;

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coefficient storing means for registering data of predetermined coefficients assigned to respective regions to be imaged of the subject;

data entering means for accepting entered data of a body weight of the subject, a region to be imaged of the subject, and one of the types of the contrast medium;

concentration reading means for reading data of the concentration from said concentration storing means depending on the type of the contrast medium whose data has been entered by said data entering means;

coefficient reading means for reading the data of one of the coefficients from said coefficient storing means depending on the region to be imaged of the subject whose data has been entered by said data entering means; and

total calculating means for calculating said total amount of the contrast medium to be injected into the subject based on said body weight whose data has been entered by said data entering means, said concentration whose data has been read by said concentration reading means, and said coefficient whose data has been read by said coefficient reading means.

21 (previously presented): A computer readable medium having a program stored thereon for executing a computer to perform a method according to claim 19.